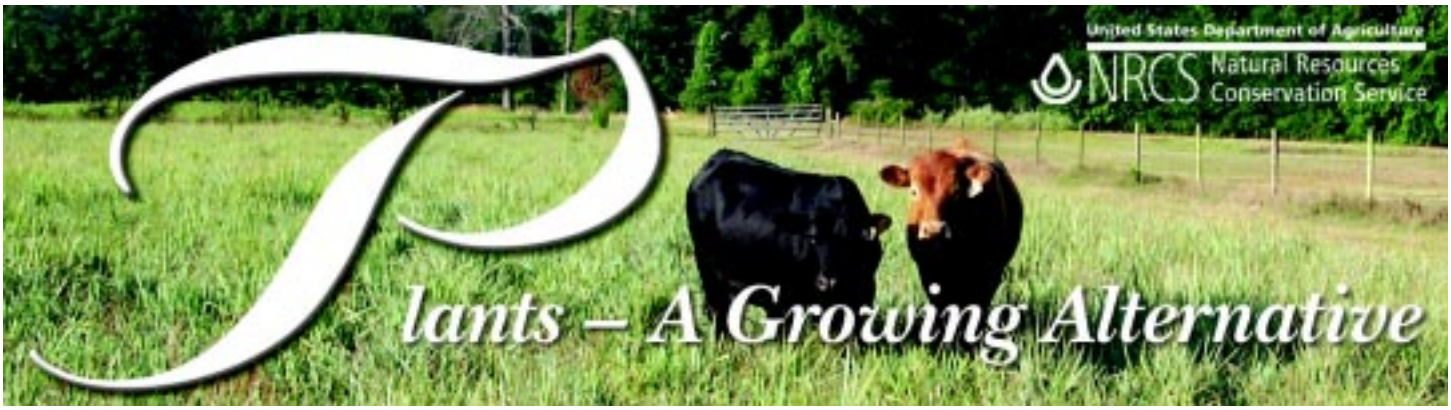

A National Publication of the Natural Resources Conservation Service Plant Materials Program — Volume 10 Summer 2003

The Plant Materials Program: A Conservation Resource

Natural Resources Conservation Service (NRCS) field offices rely on a variety of tools to accomplish conservation on private lands. One valuable resource offices can turn to is the agency's own Plant Materials Program. The program has selected plants and developed planting technology critical to the success of Farm Bill programs like the Conservation Reserve Program (CRP), Wetlands Reserve Program (WRP) and Wildlife Habitat Incentives Program (WHIP).

Conservation Online

Visit:
http://Plant-Materials.nrcs.usda.gov
to access the following publications and other reference material related to Farm Bill programs:

- **CRP Tree and Shrub Establishment**
- **Herbicides and Timing for Control of Broomsedge in Conservation Reserve Fields**
- **Plant Material for the Wildlife Habitat Incentives Program**
- **Riparian/Wetland Project Information Series No. 14: Harvesting, Propagating and Planting Wetland Plants**

How To Reduce Windbreak Rodent Damage

Conservation Reserve Program— *Over 75 percent of the recommended trees, shrubs, grasses, and forbs in the Field Office Technical Guide are Plant Materials Program selections. Plant Materials Centers (PMCs) find effective ways for weed and pest control in CRP plantings.*

Field windbreaks help establish permanent cover on CRP land, and successful windbreaks depend on proper design, site preparation, planting, and post-planting care. Many sites are infested with voles or meadow mice (*Microtus* spp.) that gnaw and burrow around newly planted trees, but landowners can apply control measures during all phases of windbreak establishment to help reduce potential rodent problems.

Design Phase

During the windbreak design phase, look for signs of vole activity such as runways and holes. Sites with a heavy cover of grass, weeds, or shrubs provide ideal habitat. If areas adjacent to a proposed windbreak site have heavy cover and appear to have vole activity, three questions need to be answered:

- Is the site appropriate for a windbreak?
- Can rodent control measures be successful?
- Should windbreak species selection be altered to species that are less attractive to voles?

Site Preparation

Begin windbreak site preparation the year before planting. Consider existing vegetation, possible erosion hazards, and potential rodent problems. On grass covered sites, apply herbicides in the spring while grass is actively growing. Plow in the fall and follow up by disking in the spring just prior to tree planting to create a clean planting bed. Voles tend to stay away from areas that are tilled and free of vegetation.

On cropland sites, site preparation activities depend upon weed density. If weeds are present, the site may only require disking just prior to tree planting. However, if voles are present during the fall prior to planting, disk the site at that time to reduce cover and food.

Planting

Using weed barrier material greatly enhances plant survival and growth, and conserves soil moisture, but may also create habitat for voles. Proper site preparation, quality plant materials, and proper planting techniques may reduce vole damage to an acceptable level.

Post-Planting Care

Windbreaks are most susceptible to vole damage during the first two years of establishment; inspect them frequently for signs of damage (e.g. gnaw marks on plants, runways, holes). If vole activity is present, serious control measures are

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needed. Remove weeds and mulches such as hay or straw from around tree trunks.

Wait until the second growing season to replace severely damaged plants. By this time, control measures should make further plant replacement unnecessary.

The answer to the common question "should I plant grass between the tree rows in a windbreak?" is yes, but it may be beneficial to cultivate between the rows for two to three years to allow the trees to establish. Then, plant grass between the rows to reduce weed growth and eliminate the need for cultivation. Avoid planting grass varieties with abundant top growth, and maintain grass at a short height to reduce vole habitat.

Rodenticides provide a quick, practical way to control large vole populations. They are usually applied to food baits such as small grains or synthetic pellets. Some rodenticides are restricted use pesticides that may only be applied by certified pesticide applicators.

Mouse snap traps can be used to control small populations by placing the trap perpendicular to a runway with the trigger end in the runway. The best times

Vole food bait station made of PVC pipe

of year to trap voles are the fall and late winter. Trapping is not effective in controlling large vole populations because time and labor costs are prohibitive.

The trunks of small trees may be protected by hardware cloth (1/4 or 1/8 inch mesh) but this method may be too time-consuming for a large windbreak. And, of course, it may be helpful to have domestic cats around.

For more details, access the Aberdeen, Idaho, PMC Technical Note 34 at **http://Plant-Materials.nrcs.usda.gov/pubs/idpmctn340499.pdf**

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Powdery Thalia A Success in Mississippi Wetlands

Wetlands Reserve Program— *The Plant Materials Program offers guidelines on harvesting, propagating, and planting a variety of wetland species. PMCs make regional selections of native plants for restoration, and produce an online wetland plant vendor guide to help field offices find plant suppliers.*

Moist soil management areas on WRP lands in the Lower Mississippi Valley are usually planted with either annual wildlife food crops or bottomland hardwood trees. Although these species provide desirable food resources for wildlife, such WRP sites often contain little plant diversity. The Jamie L. Whitten (Coffeeville, Mississippi) PMC, in cooperation with the NRCS Wetland Science Institute, conducted a study to evaluate the potential for improving diversity on WRP sites by using herbaceous wetland plants.

Two spring plantings and one fall planting were made on a pair of WRP sites in Quitman County, Mississippi, using four species previously tested at the PMC: Indian Bayou Source powdery thalia (*Thalia dealbata*), Leaf River Source woolgrass (*Scirpus cyperinus*), soft-stem bulrush (*Schoenoplectus tabernaemontani*), and soft rush (*Juncus effusus*). Bareroot plants were established in a zone extending from 0.3 m (1 ft) below to 0.3 m (1 ft) above normal winter water level. Two water management schemes were tested: normal practice, where ponding in the fall and winter was permitted and water was drained in the spring; and permanent inundation, where rain water collection and ponding was permitted year-round.

Powdery thalia in ponded wetland

Plant survival after the first spring planting was poor because of extremely dry conditions; however, powdery thalia plants survived in small numbers from this planting, mainly because of the increased food reserves they can store in their large rhizome system. The other species are only weakly rhizomatous and are not capable of storing large quantities of food.

Overall survival was better for the fall planting than either spring planting, since plants were able to take advantage of increased water levels in the winter months. Initial plant survival was only slightly better on the permanently inundated site, but long-term survival was dependent on the water ponding provided by this management regime.

Powdery thalia was the only species that consistently performed well when planted in both spring and fall. The original bareroot propagules established and grew into large clumps in areas ranging from 0.15 m (0.5 ft) to 0.3 m (1 ft) below winter water level. Additional clumps in other locations on the imponded site were evident four to five years after the initial planting, indicating that powdery thalia has the capability to establish by seed in areas with the correct hydrologic conditions. Such plantings have the potential to provide a seed source for reestablishing this native species in the Lower Mississippi Valley, where its populations have suffered habitat loss.

Soft-stem bulrush did not establish at any elevation. Soft rush and woolgrass were adapted to slightly higher elevations than powdery thalia. Plants of these two species grew vigorously on the permanently inundated site but showed little signs of colonization.

Allowing water to pond year round is a major change to the wetland management routine that most landowners follow. However, this change promotes establishment of herbaceous wetland plants, which increases plant diversity and improves the wildlife benefits of WRP sites.

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Plants - A Growing Alternative

Plant Materials Launches Colorful Online Newsletter

A new online newsletter is just a mouse click away.

Plant Solutions, a full-color two-page E-mail newsletter, features success stories from around the nation and expert advice on plants' role in accomplishing conservation. The first two issues, now available on the Plant Materials Program Web site, included short articles on using plants to create bird habitat, interseeding existing CRP stands, revegetating threatened coastal prairie and using native switchgrass as a biofuel.

The newsletter will be emailed six times annually and is available through a list-serve subscription. To subscribe to ***Plant Solutions***, visit **http://Plant-Materials.nrcs.usda.gov**. For more information, contact Jody Holzworth, public affairs specialist for the National Plant Materials Program, at **jody.holzworth@id.usda.gov**

Plant Spotlight

'Americus' Yellow Indiangrass

'Americus' yellow indiangrass (*Sorghastrum nutans*) is a native, perennial warm-season bunch grass selected in 2002 by the Jimmy Carter PMC in Americus, GA. It produces abundant forage and demonstrates good survival under grazing conditions in the southeastern United States. 'Americus' is also useful for wildlife, buffer, erosion control, and critical area plantings.

Texas Wildflowers Star in Wildlife Seed Mixes

Wildlife Habitat Incentives Program—*PMCs develop seed mixes and select plants for wildlife food and cover. The Plant Materials Program recommends uses for its selections in plant fact sheets and plant guides, available through the Plant Materials Program Web site.*

Texas range and wildlife food plot seed mixes commonly include a variety of grasses and native perennial wildflowers. To examine their potential for seed mixes specifically recommended for South Texas, the Kika de la Garza PMC in Kingsville, Texas, recently studied four native wildflowers: Illinois bundleflower (*Desmanthus illinoensis*), awnless bushsunflower (*Simsia calva*), orange zexmenia (*Wedelia texana*), and perennial lazy daisy (*Aphanostephus riddellii*). These species are valuable wildlife food sources and, in this study, they were evaluated for survival, plant hardiness, vegetative production, seed production, and other desirable characteristics.

Plants started in the greenhouse were transplanted into replicated field plots at the PMC in April and were observed monthly. At the end of the study in December, plant survival and condition were noted.

Species	Average survival (%)	Plant condition in December
Awnless bushsunflower	3	Dry, no new growth visible
Illinois bundleflower	0	No surviving plants
Orange zexmenia	100	Dry, no new growth visible
Perennial lazy daisy	94	Green, new growth visible

Most of the awnless bushsunflower died suddenly in August. Roots on dead plants were spongy-textured, and the cause of death was confirmed as cotton root rot, a soil borne virus. The other wildflowers appeared to be fairly resistant to the disease.

The Illinois bundleflower dispelled concern that it would not be drought tolerant enough to survive the hot, dry, South Texas summer by producing flowers and seeds through August. However, it began to die during heavy rains in September and by mid-October, no Illinois bundleflower plants remained.

Orange zexmenia was the hardiest of the four species and also produced the most vegetation. It survived the best, was highly drought and wet tolerant, and produced multiple new seedlings near the existing plants. However, orange zexmenia went dormant in early December.

Orange zexmenia (left) and perennial lazy daisy

Perennial lazy daisy also had a good survival rate and tolerated both wet and dry conditions. While it was a much smaller plant, it produced new vegetative growth on a fairly continuous basis. Such an attribute makes it a good wildlife forage source at times when other quality forage is scarce.

This study illustrates the importance of taking into account the characteristics of an individual range site when selecting species for a seeding mix. Landowners may wish to include Illinois bundleflower in mixes if their planting sites have well drained, sandy soils. Similarly, if planting sites have no history of root rot, landowners might consider using awnless bushsunflower in their wildlife food plots. Landowners can be comfortable using orange zexmenia and perennial lazy daisy in regional range and wildlife seeding mixes, as both species are well suited to South Texas conditions.

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The Mission of the NRCS Plant Materials Program:

Our mission is to develop, test, and transfer effective state-of-the art plant science technology to meet customer and resource needs. Our activities are consistent with the objectives of the current United States Department of Agriculture and Natural Resources Conservaton Service Strategic Plans, namely to provide timely and effective vegetative solutions for identified resource needs.

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If you would like additional copies of this newsletter or to be included on the mailing list or contribute to the publication, please call (301) 504-8175, fax (301) 504-8741, or E-mail: pmfeedback@md.usda.gov. Find us on the Internet at: **http://Plant-Materials.nrcs.usda.gov**

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